

CLAIMS:

1. A display device, comprising:

- an electron source for generating an electron beam;
- a luminescent display screen for receiving the electron beam and displaying image information;
- 5 – electron beam guiding means for guiding said electron beam to said display screen, said electron beam guiding means comprising a beam guiding channel extending essentially in a guidance direction parallel to the display screen and being provided with electrode means defining, in operation, a beam guiding electric potential in the beam guiding channel,
- 10 characterized in that the electrode means are arranged to focus the electron beam in a transverse direction that is substantially orthogonal to the guidance direction, and parallel to the display screen.

2. A display device as claimed in claim 1, characterized in that the electrode

- 15 means comprise a first electrode having a base portion parallel to the display screen, and side portions extending from said base portion in a direction perpendicular to the display screen.

3. A display device as claimed in claim 2, characterized in that the side portions

- 20 are positioned at both edges of the base portion as seen in the transverse direction, the side portions extending towards the display screen.

4. A display device as claimed in claim 1, characterized in that the display device is provided with a first insulating plate having barrier ribs and being provided with conducting traces being part of the electrode means, the channel being defined between adjacent barrier ribs of the first insulating plate.

25 5. A display device as claimed in claim 4, characterized in that the display device comprises a second insulating plate between the first insulating plate and the display screen, said second insulating plate being provided with beam extraction apertures for extracting the

electron beam from the channel, and having conducting traces being part of the electrode means.

6. A display device as claimed in claim 4 or 5, characterized in that the
5 conducting traces extend substantially perpendicularly to the channel.
7. A display device as claimed in claim 2, characterized in that the channel
comprises a plurality of subsequent cells, and the electrode means comprise a second
electrode between one of the cells and an adjacent one of the cells, said second electrode
10 being provided with electron beam passing apertures.
8. A display device as claimed in claim 7, characterized in that the second
electrode cooperates with the first electrode for modifying the electric potential in a selected
cell of the channel, so as to extract the electron beam from said selected cell towards the
15 display screen.
9. A display device as claimed in claim 8, characterized in that the selected cell
comprises an electron optical mirror.
- 20 10. A display device as claimed in claim 5, characterized in that the electrode
means comprise a third electrode near a beam extraction aperture in the second insulating
plate.
- 25 11. A display device as claimed in claim 1, characterized in that the display device is
provided with two electron sources located at opposing ends of the channel.
- 30 12. A display device as claimed in claim 1, characterized in that the display screen
comprises a plurality of picture elements, and the electron beam guiding means comprise
positioning means for positioning the electron beam extracted from the selected cell onto an
associated picture element.
13. A display device as claimed in claim 12, characterized in that one of the
subsequent cells is associated with a picture element of the display screen, and the
positioning means comprise a plurality of conducting plates being provided with apertures for

passing the electron beam from said one of the subsequent cells to the associated picture element.

14. A display device as claimed in claim 13, characterized in that the positioning

5 means comprise a stack of alternating insulating and conductive plates.

15. A display device as claimed in claim 12, characterized in that one of the
subsequent cells is associated with a plurality of picture elements, the positioning means
comprising selection means for positioning the electron beam onto a preselected one of said
10 plurality of picture elements.